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Metamorphosis of Power Distribution: System Services from Photovoltaics

Fact Sheet

Project Information

METAPV

Grant agreement ID: 239511

Project closed

Start date

11 September 2009

End date

10 March 2014

Funded under

Specific Programme "Cooperation": Energy

Total cost

€ 9 383 212,07

EU contribution

€ 5 520 793,52

Coordinated by

3E

 Belgium

Objective

MetaPV is the first project world-wide that will demonstrate the provision of electrical benefits from photovoltaics (PV) on a large scale. Additional benefits for active grid support from PV will be demonstrated at two sites: a residential/urban area of 128 households with 4 kWp each, and an industrial zone of 31 PV systems with 200 kWp each. The enhanced control capacities to be implemented into PV inverters and demonstrated are active voltage control, fault ride-through capability, autonomous grid operation, and interaction of distribution system control with PV systems. A detailed technical and economic assessment of the additional services from PV is carried out. The role of PV in an area fully supplied by renewable sources is to be

assessed. The work covers 3 phases. In the first phase, the demonstration is prepared for the specific demonstration zones. The PV side (inverter) and the network side will be both addressed. Small and large PV inverters for residential and industrial applications, which both can provide additional benefits for electrical network operation, will be developed. On the network side, adapted concepts for grid planning and operation of distribution networks with large amounts of PV generation will be developed. In the second phase, based on the development and suggestions of phase one, two pilot demonstrations will be carried out and evaluated. The first one will demonstrate the active contribution of PV for increasing power quality and security of the system operation in a residential area. In the second one, security of power supply and autonomous operation will be demonstrated in an industrial zone. The third phase covers communication with stakeholders that will take place from the beginning of the demonstration phase. The project results will be disseminated and communicated to the stakeholders, the scientific community and to the local public. The demonstration will allow for successful replication in other grids in Europe.

Fields of science (EuroSciVoc)

[engineering and technology](#) > [environmental engineering](#) > [energy and fuels](#) > [renewable energy](#) > [solar energy](#) > **[photovoltaic](#)**



Keywords

.

Programme(s)

[FP7-ENERGY - Specific Programme "Cooperation": Energy](#)

Topic(s)

[ENERGY-2007-2.1-11 - Multiple benefits of PV systems](#)

Call for proposal

Funding Scheme

[CP - Collaborative project \(generic\).](#)

Coordinator



3E

EU contribution

No data

Total cost

No data

Address

KALKKAAI 6
1000 Bruxelles / Brussel
 **Belgium** 

Region

Région de Bruxelles-Capitale/Brussels Hoofdstedelijk Gewest > Région de Bruxelles-Capitale/ Brussels Hoofdstedelijk Gewest > Arr. de Bruxelles-Capitale/Arr. Brussel-Hoofdstad

Activity type

Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links

[Contact the organisation](#)  [Website](#) 
[Participation in EU R&I programmes](#) 
[HORIZON collaboration network](#) 

Participants (5)



Infrax

 **Belgium**

EU contribution

No data

Address

Koningsstraat 55

1000 BRUSSELS 

Activity type

Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links

[Contact the organisation](#)  [Website](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Total cost

No data



ÖSTERREICHISCHES FORSCHUNGS- UND PRÜFZENTRUM ARSENAL GES.M.B.H.

 Austria

EU contribution

No data

Address

Giefinggasse 2

1210 Vienna 

Activity type

Research Organisations

Links

[Contact the organisation](#)  [Website](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Total cost

No data



SMA Solar Technology AG

 Germany

EU contribution

No data

Address

Sonnenallee 1
34266 Niestetal 

Region
Hessen > Kassel > Kassel, Landkreis

Activity type
Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links
[Contact the organisation](#) 
[Participation in EU R&I programmes](#) 
[HORIZON collaboration network](#) 

Total cost
No data



UNIVERZA V LJUBLJANI

 Slovenia
EU contribution
No data

Address
KONGRESNI TRG 12
1000 Ljubljana 

Region
Slovenija > Zahodna Slovenija > Osrednjeslovenska

Activity type
Higher or Secondary Education Establishments

Links
[Contact the organisation](#)  [Website](#) 
[Participation in EU R&I programmes](#) 
[HORIZON collaboration network](#) 

Total cost
No data



Limburgse Reconversie Maatschappij NV
 Belgium
EU contribution

No data

Address

Kempische Steenweg

Hasselt 

Links

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[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Total cost

No data

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European Union, 2025